

In the Claims

1. (Amended) A network interface device, comprising:
a first interface operable to receive at least two incoming calls over a subscriber line;
a second interface operable to facilitate communication between the first interface and a first telephone line and between the first interface and a second telephone line, the second interface also operable to generate one or more first ring voltages on the first telephone line and one or more second ring voltages on the second telephone line; and
a processor coupled to the first interface and the second interface, the processor operable to instruct the second interface to generate the first and second ring voltages in response to receiving the incoming calls, the processor also ~~operable to~~ operable to:
measure a total instantaneous load placed on the second interface;
compare the total instantaneous load to a determined threshold level; and
if the total instantaneous load exceeds the threshold level, maintain the total instantaneous load below the determined threshold level by shifting in time the respective peak voltages of the ~~allocate the first and second ring voltages among the first and second telephone lines to ensure that a total instantaneous load placed on the second interface does not exceed a determined threshold level.~~
2. (Original) The network interface device of Claim 1, wherein the processor is operable to allocate the first and second ring voltages by staggering the first and second ring voltages such that the one or more first ring voltages on the first telephone line are generated at different times than the one or more second ring voltages on the second telephone line.
3. (Original) The network interface device of Claim 2, wherein the processor staggers the first and second ring voltages after determining that the total instantaneous load placed on the first and second telephone lines exceeds the determined threshold level.
4. (Original) The network interface device of Claim 1, wherein the processor is operable to allocate the first and second ring voltages by instructing the second interface to generate the first and second ring voltages simultaneously.

5. (Original) The network interface device of Claim 4, wherein the processor instructs the second interface to generate the first and second ring voltages simultaneously after determining that the total instantaneous load placed on the first and second telephone lines does not exceed the determined threshold load.

6. (Original) The network interface device of Claim 1, wherein the second interface is further operable to measure a load placed on each of the telephone lines.

7. (Original) The network interface device of Claim 1, wherein the processor is further operable to:

- extract class of service information from the incoming calls; and
- communicate the class of service information for each incoming call to the telephone line associated with the incoming call during the generation of the ring voltage on the telephone line associated with the incoming call.

8. (Original) The network interface device of Claim 1, wherein:
the second interface is further operable to decode dual-tone multi-frequency touch tones received over one of the telephone lines and to communicate the decoded tones to the processor; and

- the processor is further operable to:
 - map all telephone numbers associated with the telephone lines to a selected telephone line in response to a first function identified by the decoded tones;
 - map a selected telephone number to a selected telephone line in response to a second function identified by the decoded tones; and
 - redirect an incoming call from one of the telephone lines to another of the telephone lines in response to a third function identified by the decoded tones.

9. (Original) The network interface device of Claim 1, further comprising a local power supply operable to supply at least some power to at least one of the processor, the first interface, and the second interface;

- wherein the network interface device draws power from the subscriber line after the local power supply fails; and

wherein the second interface remains operable to communicate over at least one of the telephone lines after the local power supply fails.

10. (Original) The network interface device of Claim 1, wherein the processor is further operable to instruct a switch to alternately couple one of the telephone lines to either the second interface or a splitter, the splitter operable to receive ringing power for the telephone line and line power for the network interface device, the splitter operable to communicate the line power to the network interface device and the ringing power to the telephone line.

11. (Original) The network interface device of Claim 1, further comprising a third interface coupled to the processor and operable to communicate with at least one digital device.

12. (Original) The network interface device of Claim 11, wherein:
the first interface comprises at least one of a Digital Subscriber Line (DSL) interface, a cable interface, and a wireless interface;
the second interface comprises:

at least one subscriber line interface circuit coupled to at least one of the telephone lines and operable to generate the ring voltage on the at least one telephone line;

at least one codec coupled to at least one subscriber line interface circuit and operable to convert analog information into digital information and to convert digital information into analog information; and

a digital signal processor coupled to the at least one codec and to the processor, the digital signal processor operable to sample digital information from the at least one codec and to communicate the samples to the processor, the digital signal processor also operable to receive digital information from the processor and communicate the digital information to the at least one codec; and

the third interface comprises at least one of a Home Phoneline Network Alliance interface, an Ethernet interface, a local area network interface, an optical interface, and a wireless interface.

13. (Original) The network interface device of Claim 1, wherein each of the one or more first ring voltages have a duration of two seconds followed by a four second pause.

14. (Currently Amended) A method for providing service to a subscriber, comprising:

receiving at least two incoming calls over a subscriber line;

identifying a first telephone line and a second telephone line associated with the incoming calls; calls; and

measuring a total instantaneous load placed on a network interface device coupled to the first and the second telephone lines;

comparing the total instantaneous load to a determined threshold level; and

if the total instantaneous load exceeds the threshold level, maintaining the total instantaneous load below the determined threshold level by shifting in time the respective peak voltages of allocating one or more first ring voltages and one or more second ring voltages among the first and second telephone lines, the first and second ring voltages allocated to ensure that a total instantaneous load placed on a network interface device coupled to the first and second telephone lines does not exceed a determined threshold level.

15. (Original) The method of Claim 14, wherein allocating the first and second ring voltages comprises staggering the first and second ring voltages such that the one or more first ring voltages on the first telephone line are generated at different times than the one or more second ring voltages on the second telephone line.

16. (Original) The method of Claim 15, wherein staggering the first and second ring voltages comprises staggering the first and second ring voltages after determining that the total instantaneous load placed on the first and second telephone lines exceeds the determined threshold level.

17. (Original) The method of Claim 14, wherein allocating the first and second ring voltages comprises initiating simultaneous generation of the first and second ring voltages.

18. (Original) The method of Claim 17, wherein initiating simultaneous generation of the first and second ring voltages comprises initiating simultaneous generation of the first and second ring voltages after determining that the total instantaneous load placed on the first and second telephone lines does not exceed the determined threshold load.

19. (Original) The method of Claim 14, further comprising measuring a load placed on each of the telephone lines.

20. (Original) The method of Claim 14, further comprising:
extracting class of service information from the incoming calls; and
communicating the class of service information for each incoming call to the telephone line associated with the incoming call during the generation of the ring voltage on the telephone line associated with the incoming call.

21. (Original) The method of Claim 14, further comprising:
decoding dual-tone multi-frequency touch tones received over one of the telephone lines;
mapping all telephone numbers associated with the telephone lines to a selected telephone line in response to a first function identified by the decoded tones;
mapping a selected telephone number to a selected telephone line in response to a second function identified by the decoded tones; and
redirecting an incoming call from one of the telephone lines to another of the telephone lines in response to a third function identified by the decoded tones.

22. (Original) The method of Claim 14, further comprising:
drawing at least some power for the network interface device from a local power supply;
drawing power from the subscriber line after the local power supply fails; and
allowing communication over at least one of the telephone lines after the local power supply fails.

23. (Original) The method of Claim 14, further comprising instructing a switch to alternately couple one of the telephone lines to either the network interface device or a

splitter, the splitter operable to receive ringing power for the telephone line and line power for the network interface device, the splitter operable to communicate the line power to the network interface device and the ringing power to the telephone line.

24. (Original) The method of Claim 14, further comprising communicating with at least one digital device.

25. (Original) The method of Claim 14, wherein each of the one or more first ring voltages have a duration of two seconds followed by a four second pause.

26. (Currently Amended) Software for providing service to a subscriber, the software embodied in at least one computer-readable medium and when executed by one or more processors operable to:

receive at least two incoming calls over a subscriber line;
identify a first telephone line and a second telephone line associated with the incoming ~~calls; calls; and~~
measure a total instantaneous load placed on the interface to the first and the second telephone lines;
compare the total instantaneous load to a determined threshold level; and
if the total instantaneous load exceeds the threshold level, instruct the interface an
~~interface to the first and second telephone lines~~ to generate one or more first ring voltages on the first telephone line and one or more second ring voltages on the second telephone line,
the respective peak voltages of the first and second ring voltages shifted in time so that the total instantaneous load does not exceed the determined threshold level. ~~the first and second ring voltages allocated to ensure that a total instantaneous load placed on the interface does not exceed a determined threshold level.~~

27. (Original) A network interface device, comprising:
means for receiving at least two incoming calls over a subscriber line;
means for generating one or more first ring voltages on a first telephone line and one or more second ring voltages on a second telephone ~~line; line; and~~
means for measuring a total instantaneous load placed on a network interface device coupled to the first and the second telephone lines;

means for comparing the total instantaneous load to a determined threshold level; and
means for maintaining the total instantaneous load below the determined threshold
level by shifting in time the respective peak voltages of allocating one or more first ring
voltages and one or more second ring voltages if the total instantaneous load exceeds the
threshold level. ~~among the first and second telephone lines, the first and second ring voltages~~
~~allocated to ensure that a total instantaneous load placed on a network interface device~~
~~coupled to the first and second telephone lines does not exceed a determined threshold level.~~

28. (Original) A network interface device, comprising:
a first interface operable to receive at least two incoming calls over a subscriber line;
a second interface operable to facilitate communication between the first interface
and a first telephone line and between the first interface and a second telephone line, the
second interface also operable to generate one or more first ring voltages on the first
telephone line and one or more second ring voltages on the second telephone line; and
a processor coupled to the first interface and the second interface, the processor
~~operable to~~ operable to:
measure a total instantaneous load placed on the second interface;
compare the total instantaneous load to a determined threshold level; and
if the total instantaneous load exceeds the threshold level, instruct the second
interface to generate the first and second ring voltages in response to receiving the incoming
calls, the generation of the ring voltages staggered such that the one or more first ring
voltages on the first telephone line are generated at different times than the one or more
second ring voltages on the second telephone line.

29. (Currently Amended) A network interface device, comprising:
a first interface operable to receive at least two incoming calls over a subscriber line;
a second interface operable to facilitate communication between the first interface
and a first telephone line and between the first interface and a second telephone line, the
second interface also operable to generate one or more first ring voltages on the first
telephone line and one or more second ring voltages on the second telephone line; and
a processor coupled to the first interface and the second interface, the processor
operable to:

determine whether a total load placed on the first and second telephone lines exceeds a threshold load; ~~load~~; and

transmit a first instruction instructing the second interface to allow a simultaneous generation of the first and second ring voltages on the telephone when the total load placed on the telephone lines does not exceed the threshold load;

transmit a second instruction instructing the second interface to stagger a generation of the first and second ring voltages when the total load placed on the telephone lines exceeds the threshold load; and

switch between the transmissions of the first and second instructions based on the determination.

~~instruct the second interface to generate the first and second ring voltages on the telephone lines, the first and second ring voltages generated simultaneously when the total load placed on the telephone lines does not exceed the threshold load, the first and second ring voltages staggered when the total load placed on the telephone lines exceeds the threshold load.~~